

REMARKS

Applicants thank the Office for reopening prosecution in view of the Appeal Brief filed on September 27, 2007. Claims 1 and 3-36 are pending in this application. Claims 1, 18, 23 and 25-28 have been amended. The independent claims have been amended to clarify the nature of the sectioned signal. No new matter has been added.

Claim Objections

Claim 26 was objected to because of an informality. Applicants have amended claim 26 for clarity. No new matter has been added. Withdrawal of this objection is respectfully requested.

Rejections Under 35 U.S.C. § 102

Claims 18, 19, 21, 26 and 28 were rejected under 35 U.S.C. 102(e) as anticipated by Katayama U.S. Patent Pub. No. 2002/0027994. Applicants respectfully traverse this rejection.

Claim 18 has been amended to recite that each section of the audio signal has audio content, *and each section corresponds to a respective time period of the audio signal*. The sections include a first section which is distorted in a manner recoverable by means of a key obtainable from audio content in at least one other section.

The independent claims now explicitly recite that the signal is sectioned into time periods, rather than into frequency bands or sound quality components as in Katayama. Support for this amendment may be found, for example, in the

paragraph bridging pages 10-11 of the specification.

As claimed, sectioning of the signal into time periods has certain advantages. For example, the composite signal can easily be constructed by appending the different sections to each other. There is no need for a complicated synthesizing means 308, as shown in Fig. 5B of Katayama.

The same combination of elements is neither disclosed nor suggested by Katayama. For example, Katayama fails to disclose that each section corresponds to a respective time period of the audio signal. On the contrary, in Katayama, as acknowledged by the Examiner, each audio signal is separated by a band separation filter into a plurality of frequency bands (see paragraph 78, Fig. 4B of Katayama). Therefore, Katayama fails to disclose all of the features of amended claim 18.

Accordingly, claim 18 is patentable over the cited reference. This logic also disposes of the rejection of claims 19 and 21, which depend from claim 18.

Similarly, claims 26 and 28 have been amended to include the temporal sectioning of an audio signal feature. Accordingly, claims 26 and 28 are patentable over Katayama for the reasons discussed above.

Katayama has six different embodiments describing many different configurations. However, it fails to disclose or suggest sectioning of a signal into two or more sections corresponding to respective time periods of the signal and generating distortion in one of the sections of the signal in a manner recoverable from a key obtainable in the other section. Furthermore, none of the other references cited by the Examiner discloses sectioning of a signal into two or more sections corresponding to respective time periods of the signal.

Additionally, an advertisement may be replaced in a first section of the signal. In this case, the claimed subject matter prevents the advertisement from being removed because the advertisement contains a key necessary for removing the distortion from the main content section of the signal. The arrangement disclosed in Katayama cannot protect an advertisement in this way.

Therefore, applicants respectfully submit that the independent claims are patentable in view of Katayama since Katayama fails to provide the required teaching or suggestion.

Rejections Under 35 U.S.C. § 103

Claims 1, 5, 8, 9-13 and 15-28 were rejected under 35 U.S.C. 102(e) as unpatentable over Downs U.S. Patent No. 6,226,618 in view of Katayama. Applicant respectfully traverses this rejection.

Amended claims 1, 18, 23 and 28 recite that each of the at least two sections corresponds to a respective time period of the audio signal. Neither Downs nor Katayama discloses sectioning of a signal into at least two sections each corresponding to a respective time period and generating distortion in one of the sections in a manner recoverable by a key obtainable from at least one other section of the signal. As the claimed feature could not be derived from either Katayama or Downs, Applicants respectfully submit that the claims are non-obvious.

Furthermore, Applicants respectfully disagree with the Examiner's contention that Katayama and Downs could be combined in the manner described in the Action. The purpose of Katayama is to have a signal which may be played back in low-quality form or high-quality form if the user has a key for unlocking a high-quality

portion of the file. In contrast, the purpose of Downs is to encrypt a Content S.C. so that it maybe only be played back if the user has a key. In Downs the user first browses a vendor website, which contains a list of available files for download and may contain a sample audio clip. If the user decides to purchase some music, then the corresponding Content S.C. is downloaded from a content storage. Any sample audio clip available from the website is completely separate from the Content S.C., as a result there is no motivation for a person skilled in the art to combine Katayama and Downs in the manner described. In Downs an audio clip is already available from the vendor website. Therefore, there would be no point in making a complicated modification to the Content S.C. to have low and high quality sections or to add further keys.

Moreover, as discussed above, even if Downs and Katayama were combined, the resulting combination would fail to result in the structure, method steps and advantages of Applicants' claims as there would be no sectioning by "time period."

Regarding claims 10-12 and 20-22, the Examiner alleges that Downs discloses that the content can store an advertisement object. In this respect the Examiner refers to column 85, line 50 of Downs. Applicants respectfully disagree. Column 85 of Downs describes the user display 1510 of a Player Application 195, i.e., it refers to a media player. It does not refer to the content of an audio file. This should be clear from the list of other components in column 85. For example, it should be clear that the "delete button," "copy to CD button," "purchase button," "play-list pause" and "play-list management window" are features of a media player, and could not possibly be part of an audio file or Content S.C. The "label/ provider/ store advertisement object" referred to in line 50 probably refers to an online advertisement that may not

even have any relation to the downloaded audio file. The advertisement certainly is not "audio" content as recited by claims 10-12 or 20-22. Applicants also note that in attempting to use the technology of Katayama, it would be impossible to provide an "advertisement section" from only the high frequency bands of the signal.

Claims 25-27 also contain the distinguishing feature that the section of the signal corresponds to the time period of the audio signal. This feature is not disclosed in any of the cited references. Therefore these claims are patentable as well, as is independent claim 28. Because of their dependency, claims 8, 9, 13, 15-17 and 24 are also allowable.

Claims 6, 7 and 14 were rejected under 35 U.S.C. §103(a) as unpatentable over Downs in view of Katayama and in further view of Schneier. Claims 3, 4, 29, 30, and 33-36 were rejected under 35 U.S.C. §103(a) as unpatentable over Downs in view of Katayama and in further view of Tian U.S. Patent No. 6,714,683. Claims 31-32 were rejected under 35 U.S.C. §103(a) as unpatentable over Downs, Katayama, Tian and Rhoads U.S. Patent No. 5,636,292. Applicants respectfully traverse these rejections. Since Downs and Katayama are cited for teachings they do not provide, as discussed above, these claims are patentable as well. The other cited references fail to cure the basic deficiencies of Downs and Katayama.

Further, with respect to claims 29 and 33, the Examiner alleges that it would be obvious to combine the features of Downs, Katayama and Tian in order to arrive at the claimed subject matter. Applicants again respectfully disagree.

Firstly, contrary to the Examiner's reasoning, Downs does not disclose "embedding said key in at least a part of said watermarked media content signal". In Downs the watermarked media content is provided in the Content S.C. The Content

S.C. comprises media Content 113 and non media (metadata). The Content S.C. does not contain a key for decrypting the Content 113. Column 18, step 127 of Downs states that "encrypted Content 113 and metadata are then packed into a Content S.C." Therefore the Content S.C. contains only Content 113 and (non-audio) metadata.

As common sense suggests, the key for decrypting Content 113 is provided in a separate package. Column 8, step 126 of Downs confirms this: "the Encrypted Symmetric Key, metadata and other information about the Content 113 is then packed into a Metadata S.C. by the S.C. Pack Tool 152". Therefore the key is packed separately into a Metadata S.C., which is separate from the Content S.C. Thus, Downs fails to disclose that the key is embedded in the watermarked media content signal, as recited in claim 29.

Furthermore, a person skilled in the art would have no motivation to combine Downs and Katayama. The purpose of Katayama is to enable a user to hear a down-graded version of the audio file, before making a purchase. However, this result is already achieved by Downs, which makes an audio clip available on a website shop, which the user can listen to before purchasing a key and downloading the Content S.C. Therefore, as the user can already preview the media file in Downs, there is no motivation to modify it to contain another key or further level of encryption as in Katayama.

Even if a person skilled in the art did combine Downs and Katayama in the way suggested by the Examiner, which Applicants submit they would not, the combination would still not achieve the method as defined by claim 29. Neither Downs nor Katayama disclose "embedding said key in at least a part of said

watermarked media content signal *using a fragile data hiding technique, whereby if said watermarked information is corrupted, altered or removed said embedded key is rendered unobtainable from said media content signal*".

The Examiner suggests that Tian will remedy this deficiency. Applicants respectfully disagree. Although Tian does disclose embedding a semi-fragile watermark, so that alteration to the watermark signal can be detected, this would not lead to the invention defined in claim 29. Firstly, the whole description of Tian is directed to detecting alterations of the watermarked signal (see Tian's abstract, column 2, lines 9-25 and column 5, lines 7-10). Even the discussion of a "fragile" watermark in column 6, lines 36-55, suggests using the absence of a watermark only as a means of detecting that the watermarked signal has undergone some form of transformation. Thus, the emphasis in Tian is on whether the watermark is present or its level of degradation. There is no disclosure in Tian that the watermark might contain a "key" used for recovering a distorted section of the media content.

Furthermore, even if a person skilled in the art did decide to combine Tian and Downs, the only likely result is that they would choose to embed the watermark using a robust or semi-fragile method. Downs already contains a watermark, and if a person skilled in the art thought to look at Tian, they would apply Tian's teaching to the watermark disclosed in Downs. It is extremely unlikely that they would decide that the "key" disclosed in Katayama should be embedded by way of a "fragile watermark."

Applicants' claims provide a signal that has both a robust watermark and a key embedded using a "fragile data hiding technique." This has a synergistic effect neither disclosed nor suggested in the cited references. It means that if the signal is disrupted in a way sufficient to corrupt, alter or remove the robust watermark, the fragile

embedded key will certainly be destroyed, making it impossible to play back the signal in undistorted form.

The information disclosed or suggested in Tian is simply that robust and fragile watermarking techniques exist. Tian's disclosure would not lead a person skilled in the art to make the creative leap to arrive at Applicants' claims. Especially, as none of the references provide any teaching to direct the skilled person in this direction. Certainly, none of the references suggests, teaches or even hints at the synergistic effect of having both a robust watermark and a fragily embedded key.

Finally, although the Examiner asserts that Downs discloses a "robust" watermark because the watermark is able to withstand compression and encryption, it is far from certain that the watermark would withstand the audio signal being split into a large number of different frequency components and then re-assembled using a synthesizer as described as in Katayama. Therefore, as a practical matter, even if the three references were combined in the manner suggested by the Examiner, it is uncertain that the resulting signal would still contain robust watermark information after it had been split into frequency components and re-assembled. Substantially, the same arguments apply to independent claim 33.

Conclusion

For the foregoing reasons, Applicants respectfully submit that this application is in immediate condition for allowance and all pending claims are patentably distinct from the cited references. Reconsideration and allowance of all pending claims are respectfully requested.

In the event that there are any questions about this application, the Examiner is requested to telephone Applicants' undersigned representative so that prosecution of the application may be expedited.

If additional fees are required for any reason, please charge Deposit Account No. 02-4800 the necessary amount.

Respectfully submitted,

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